

REMARKS ON "DEFENSIVE" BEHAVIOR IN THE HOGNOSE
SNAKE *HETERODON SIMUS* (LINNAEUS)

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Bluffing and death-feigning antics of Hognose Snakes are well known, although most recorded observations pertain to *Heterodon platyrhinos*. At the time Edgren (1955) reviewed the natural history of the genus *Heterodon*, there was no literature confirmation for these traits in *H. simus*, often considered a rare species in many parts of its range. Carr and Goin (1955) state that *simus* is much less inclined to perform than *platyrhinos*. Schmidt and Inger (1957) say that all three species of *Heterodon* will bluff and feign death. The present observations, dealing primarily with *H. simus*, indicate the nature of variation that occurs in this stylized mode of behavior and stress the need for a more critical study.



Figure 1. Death-feigning of the Southern Hognose Snake, *Heterodon simus*.
Alachua County, Florida.

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A 17 inch male *H. simus* taken near Gainesville, Alachua County, Florida, opened its mouth widely, emitted loud hissing noises, and flattened its neck when captured. When further annoyed it went into a series of contortions, rolled onto its back, and became motionless. The tongue continued to be flicked about for awhile, but within a minute it hung fully extended from the mouth, with only a slight movement of the basal portion being noticeable. It is characteristic for a "lifeless" Hognose Snake that is placed on its belly to roll over again, as though this were the only respectable position for a dead serpent. The present individual, however, would perform in this manner only during the early stages of its act, before movement had ceased.

A second individual from Gainesville, a 16 inch female, did not gape its mouth during the early bluffing stage, but did so as it was going into the writhing of the death act. The death stage was accompanied by defecation and extrusion of the cloaca. During a typical act by this animal, after movement had ceased, the mouth remained agape for five minutes, the tongue flicked after seven, and the snake righted itself after eight minutes. Continued annoyance would cause it to repeat the performance, but for shortened periods of time. After being in captivity for several weeks, the snake was less prone to feign but would readily hiss and spread. When these actions did not dissuade the tormentor it would hide its head under a coil. Finally after much aggravation it would feign death. When not disturbed for a week it reacted with renewed vigor. This specimen persisted in remaining on its back during the death act.

Several other *simus* seen by one of us refused to do anything but hiss and hide their heads under their bodies when annoyed. Robert H. Mount has told us of two Dixie County, Florida, specimens that seemed to behave in a typical *platyrhinos* fashion.

More variation, individual and interspecific, exists in these interesting behavioral traits than is generally realized. In the two specimens of *H. simus*, whose actions are described above, there were differences in whether the mouth was gaped during the early bluffing stage, and whether they would turn on their backs after being righted in the latter minutes of the death-feigning act. It has already been mentioned (Carr and Goin, 1955) that *simus* may not perform with the same frequency as *platyrhinos*. Two specimens of the latter species, from Missouri and Illinois, gaped the

mouth widely while bluffing. This is characteristic of *H. nasicus* but not of *platyrhinos* (Schmidt and Davis, 1941; Edgren, 1955). The Illinois individual bit several people, an almost unheard of occurrence for any member of the genus. There is much opportunity for comparative behavioral and physiological studies of these snakes.

LITERATURE CITED

CARR, ARCHIE, and COLEMAN J. GOIN

1955. *Guide to the reptiles, amphibians, and fresh-water fishes of Florida*. Univ. Florida Press, Gainesville. ix + 341 pp.

EDGREN, RICHARD A.

1955. The natural history of the Hog-nosed Snakes, genus *Heterodon*: a review. *Herpetologica* 11 (pt. 2): 105-117.

SCHMIDT, KARL P., and D. DWIGHT DAVIS

1941. *Field book of snakes of the United States and Canada*. G. P. Putnam's Sons, New York. xii + 365 pp.

SCHMIDT, KARL P., and ROBERT F. INGER

1957. *Living reptiles of the world*. Doubleday & Co., Garden City, New York. 287 pp.